This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A <u>software</u> tool <u>containing machine readable instructions stored on a physical medium</u> for monitoring the behavior of a running computer program <u>for code patterns that violate a given set of coding rules,</u> <u>the software tool</u> comprising:

a pattern detector manager <u>including machine readable instructions</u> for inserting into a running computer program a plurality of entry breakpoints, each of said entry breakpoints being associated with one of a plurality of defined coding patterns; and

a <u>plurality of</u> pattern ~~detector for determining~~ <u>detectors, each of the pattern detectors being associated with one of said defined coding patterns, including machine readable instructions, and being invoked by the pattern detector manager,</u> after one of the entry breakpoints <u>associated with the coding pattern associated with said each of the pattern detectors,</u> is reached in the computer program, <u>for determining</u> whether the <u>computer</u> program violates the coding pattern associated with said ~~reached breakpoint~~ <u>each of the pattern detectors.</u>

2. (Original) A tool according to Claim 1, wherein the pattern detector manager automatically inserts a plurality of breakpoints for pattern detection, with little or no intervention from the user.

3. (Original) A tool according to Claim 1, wherein, when one of the entry breakpoints is reached in the computer program, the pattern detector manager inserts into the program at least one further breakpoint, each further breakpoint identifying a respective step in the program that is part of the coding pattern associated with said one of the entry breakpoints.

4. (Original) A tool according to Claim 1, for use with a debugger for debugging the computer program, and further including a launcher to invoke the pattern detector manager when the debugger is used to debug the program.

5. (Original) A tool according to Claim 1, wherein the pattern detector manager removes the entry breakpoints at specified times.

6. (Original) A tool according to Claim 3, wherein the pattern detector manager removes the entry breakpoints and the further breakpoints at specified times.

7. (Original) A tool according to Claim 3, wherein:

the pattern detector manager includes means for monitoring for the occurrences of the entry breakpoints; and

the pattern detector manager inserts said at least one further breakpoint into the computer program in response to the monitoring means detecting the occurrence of said one of the entry breakpoints.

8. (Original) A tool according to Claim 1, wherein the plurality of defined coding patterns are selected from the group comprising best practice patterns and problematic coding patterns.

9. (Original) A method for monitoring the behavior of a running computer program, comprising the steps:

inserting into a running computer program a plurality of entry breakpoints, each of said entry breakpoints being associated with one of a plurality of defined coding patterns; and

determining, after one of the entry breakpoints is reached in the computer program, whether the program violates the coding pattern associated with said reached breakpoint.

10.   (Currently Amended) A method according to Claim [[9]] 21, wherein the inserting step includes the step of, when one of the entry breakpoints is reached in the computer program, inserting into the program at least one further breakpoint, each further breakpoint identifying a respective step in the program that is part of the coding pattern associated with said one of the entry breakpoints.

11.   (Currently Amended) A method according to Claim [[9]] 21, for use with a debugger for debugging the computer program, and further including the step of invoking the pattern detector manager when the debugger is used to debug the program.

12.   (Currently Amended) A method according to Claim [[9]] 21, wherein further including the step of removing the entry breakpoints at specified times.

Claim 13 (Cancelled).

Claim 14 (Cancelled).

15. (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for monitoring the behavior of a running computer program, said method steps comprising:

~~inserting~~ using a pattern detector manager to insert into a running computer program a plurality of entry breakpoints, each of said entry breakpoints being associated with one of a plurality of defined coding patterns; and

~~determining,~~ using a plurality of pattern detectors for monitoring the computer program, wherein each of the pattern detectors are associated with one of said defined coding patterns, including the step of the program detector manager invoking each of the pattern detectors, after one of the entry breakpoints associated with the coding pattern associated with said each of the pattern detectors, is reached in the computer program, for determining whether the computer program violates the coding pattern associated with said ~~reached breakpoint~~ each of the pattern detectors.

16. (Currently Amended) A program storage device according to Claim 15, wherein the ~~inserting~~ step of using the pattern detector manager includes the step of, when one of the entry breakpoints is reached in the computer program, inserting into the program at least one further breakpoint, each further breakpoint identifying a respective step in the program that is part of the coding pattern associated with said one of the entry breakpoints.

17. (Original) A program storage device according to Claim 15, for use with a debugger for debugging the computer program, and wherein said method steps include the further step of invoking the pattern detector manager when the debugger is used to debug the program.

18. (Original) A program storage device according to Claim 15, wherein said method steps include the further step of removing the entry breakpoints at specified times.

19. (Original) A program storage device according to Claim 16, wherein said method steps include the further step of removing the entry breakpoints and the further breakpoints at specified times.

20. (Original) A program storage device according to Claim 15, wherein step of inserting the at least one further breakpoint into the computer program includes the steps of:

monitoring for the occurrences of the entry breakpoints; and

inserting said at least one further breakpoint into the computer program in response to detecting the occurrence of said one of the entry breakpoints.

21. (New) A method of detecting code patterns in a computer program that violates a given set of coding rules, the method comprising the steps of:

defining a set of coding rules, each of the coding rules being associated with a respective one patter detector;

providing a pattern detector manager for managing said pattern detectors;

providing a computer program, and running the computer program as a debug mode;

the pattern detector manager identifying, during the running of the computer program in the debug mode, points in the computer program that relate to said coding rules, and said pattern detector manager inserting into the computer program an entry breakpoint at each of said identified points;

said pattern detector manager invoking each of the pattern detectors to monitor the computer program for a violation of the coding rule associated with said each of the pattern detector, including the step of:

each of the pattern detectors inserting one or more further breakpoints into the computer program to identify further points in the computer program that relate to the coding rule associated with said each of the pattern detector, and tracking said additional breakpoints to determine whether the computer program violates the coding rule associated with said each of the pattern detectors.

22.   (New) A method according to Claim 21, wherein the tracking step includes the steps of, said each of the pattern detectors

monitoring the running computer program for the occurrence of any one of the first set of defined conditions, the occurrence of which violates the coding rule associated with said each of the pattern detectors; and

monitoring the running computer program for the non-occurrence of any one of a second set of defined conditions, the non-occurrence of which violates the coding rule associated with said each of the pattern detectors.